## **CLAIMS**

What is claimed is:

An isolator mechanism for use with a housing having a bearing with lubricant in the housing and a shaft protruding through the housing, the isolator comprising:

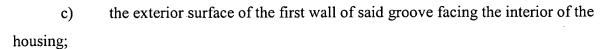
- a) a stator affixed to the housing and surrounding the shaft;
- b) said stator having a radial groove formed therein with the walls of said groove extending between said housing and said shaft;
  - c) / the exterior surface of a first wall of said groove facing the interior of the housing;
- an axial hole in said first wall at the lower extremity of said first wall from said shaft connecting said groove to said housing.
- An isolator accordance with Claim 1, wherein said radial groove is more that one-half the radially dimension of said stator.
  - 3. An isolator accordance with Claim 1, wherein said hole in said first wall of stator includes a axially sloping surface connecting said radial groove to said housing.
  - 4. An isolator accordance with Claim 3, wherein said hole and said sloping surface are elongated.
  - 5. An isolator accordance with Claim 3, wherein said hole and said sloping surface are milled in said first wall.
  - 6. An isolator accordance with Claim 1, wherein the inside diameter of said stator is proportional to the diameter of said shaft.
  - 7. An isolator accordance with Claim 6, wherein the proportion of said stator to said shaft is 0.005 inches per inch of shaft diameter.
  - 8. An isolator accordance with Claim 4, wherein said hole and said sloping surface are elongated circumferentially.
  - An isolator mechanism for use with a housing having a bearing with lubricant in a housing and a shaft protruding through the housing, the isolator comprising:
    - a) a stator affixed to the housing and surrounding the shaft;
  - b) said stator having a plurality of radial grooves formed therein with the walls of said grooves extending between said housing and said shaft;

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- the exterior surface of a first wall of said grooves facing the interior of the housing;
  - d) an axial hole in said in said walls at the extremity of said walls from said shaft connecting said grooves to said cavity.
  - 10. An isolator accordance with Claim 9, wherein said radial grooves are more than one-half the radial dimension of said stator.
  - 11. An isolator accordance with Claim 10, wherein said hole in said walls of said stator include a sloping surface connecting said radial grooves to said housing.
  - 12. An isolator accordance with Claim 11, wherein said hole and said sloping surface are elongated.
  - 13. An isolator accordance with Claim 12, wherein said hole and said sloping surface are milled in said walls of said stator.
  - 14. An isolator accordance with Claim 9, wherein the inside diameter of said stator is proportional to the shaft diameter.
  - 15. An isolator accordance with Claim 14, wherein the proportion between said stator and said shaft is 0.005 inches per inch of shaft diameter.
  - 16. An isolator accordance with Claim 12, wherein said hole in said stator is elongated circumferentially.

An isolator mechanism for use with a housing having a bearing with lubricant in the housing and a shaft protruding through the housing, to isolator comprising:

- a) a stator affixed to the housing and surrounding the shaft;
- b) said stator having a radial groove formed therein with the walls of said groove extending between said housing and said shaft;
  - c) the exterior surface of a first wall of said favity facing the interior of the housing;
- d) a plurality of axial holes in said first wall at the extremity of said first wall from said shaft connecting said groove to said housing.
- An isolator mechanism for use with the housing having a bearing with lubricant in the housing and a shaft protruding though the housing, the isolator comprising:
  - a) a stator affixed to the housing and surrounding the shaft;
  - b) said stator having a radial groove formed therein with the walls of said grooves extending between said housing and said shaft;



- d) an axial hole in said first wall at the extremity of said first wall from said shaft connecting said groove to said cavity;
  - e) a rotor affixed to said shaft and rotating therewith interfacing with said stator.
  - 19. An isolator accordance with Claim 18, wherein said hole in said first wall of said stator includes a sloping surface connecting said radial groove to said housing.
  - 20. An isolator in accordance with Claim 18, wherein said radial groove is more than one-half the radial dimension of said stator.
  - 21. An isolator in accordance with Claim 19, wherein said hole and said sloping surface are elongated.
  - 22. An isolator in accordance with Claim 19, wherein said hole and said sloping surface are milled in said first wall.
  - 23. An isolator in accordance with Claim 18, wherein the inside diameter of said stator is proportional to the shaft diameter.
  - 24. An isolator in accordance with Claim 18, wherein the interface between the rotor and stator includes an ejection port for ejection of contaminants from the exterior without reaching the housing.
  - 25. An isolator in accordance with Claim 24, wherein the contaminants are expelled by the pumping action between the rotor and the stator.
  - 26. An isolator in accordance with Claim 18, wherein said rotor surrounds said stator and prohibits the entry or exit and subsequent contaminants.